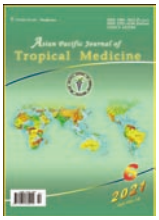

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Ivermectin as an adjunct treatment for hospitalized adult COVID-19 patients: A randomized multi-center clinical trial

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ABSTRACT

Objective: To evaluate different doses of ivermectin in adult patients with mild COVID-19 and to evaluate the effect of ivermectin on mortality and clinical consequences.

Methods: A randomized, double-blind, placebo-controlled, multicenter clinical trial was performed at five hospitals. A total of 180 mild hospitalized patients with COVID-19 confirmed by PCR or chest image tests were enrolled and allocated to six arms including hydroxychloroquine 200 mg twice per day, placebo plus hydroxychloroquine 200 mg twice per day, single dose ivermectin (200 μg/kg), three low interval doses of ivermectin (200, 200, 200 μg/kg), single dose ivermectin (400 μg/kg), and three high interval doses of ivermectin (400, 200, 200 μg/kg). The primary endpoint of this trial was all-cause of mortality or clinical recovery. The radiographic findings, hospitalization and low O_2 saturation duration, and hematological variables of blood samples were analyzed.

Results: A total of 16.7% (5/30) and 20.0% (6/30) patients died in arms treated with hydroxychloroquine 200 mg twice per day and placebo plus hydroxychloroquine 200 mg twice per day, respectively, and a reduction in mortality rate in patients receiving ivermectin treatment to 0%, 10%, 0% and 3.3% for arms 1-4 were observed. Risk of mortality was also decreased about 15% in the ivermectin treated arms.

Conclusions: Ivermectin as an adjunct reduces the rate of mortality, time of low O_2 saturation, and duration of hospitalization in adult COVID-19 patients. The improvement of other clinical parameters shows that ivermectin, with a wide margin of safety, had a high therapeutic effect on COVID-19.

KEYWORDS: SARS-COV-2; Ivermectin; Randomized controlled trial; Dose-respond relationship

1. Introduction

The COVID-19 disease has become a pandemic after the WHO declaration in March 2020. This disease has created a difficult condition around the world, and hence there is an important and urgent need to find proper treatments for an effective cure, decrease the virus carriage duration, and thus limit its transmission in society[1-3]. So far, different drugs such as hydroxychloroquine, azithromycin, remdesivir, oseltamivir, lopinavir, and ritonavir have been used against COVID-19[4-10]. However, among the candidate treatments, only remdesivir have been tested in large

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